

What mothers wish for their children: Mother-constructed higher education future orientation and its antecedents

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This study examines the future orientation regarding higher education mothers wish for their children and four of its antecedents. The antecedents are: mothers' educational attainment, mothers' educational expectations, and mothers' supported children's motivation applying to two types: autonomous and controlled. Review of earlier research led to the construction of a multiple-step model indicating that mothers' educational attainment impacts mothers' educational expectations which in turn impacts the education-related future orientation mothers wish their children to develop indirectly, via mothers' wish to differentially transmit to their children motivational autonomy and control. Employing Structural Equation Model (Amos 26), the mothers' constructed model was examined with data collected from 179 mothers of Israeli Jewish children and youths, which resulted in a good fit of the multiple step model to the data. Specifically, analysis supported the impact of mothers' wish to transmit motivational autonomy --but not of mothers' wish to transmit motivational control -- on mothers' wished-for education-related future orientation. Discussion addresses the importance of future thinking for impacting present ideas applying to mother-constructed higher education future orientation for their children academic achievement, and calls for further empirical analysis of its impact on mother' behavior prompting academic achievement and its impact on children's academic achievement, and for further testing of the model on diverse samples.

Keywords: mother's higher education expectations, mother's guided educational motivation, mother's constructed future orientation, future orientation, structural equation modeling.

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Lo que las madres quieren para sus hijos: orientación futura para la educación superior construida por la madre y sus antecedentes

Este estudio examina la orientación futura respecto a la educación superior que las madres desean para sus hijos y cuatro de sus antecedentes. Los antecedentes son: el nivel educativo de las madres, las expectativas educativas de las madres y la motivación de los hijos apoyada por las madres, que se aplica a dos tipos: autónoma y controlada. La revisión de investigaciones anteriores condujo a la construcción de un modelo de múltiples pasos que indica que el nivel educativo de las madres influye en las expectativas educativas de las madres, que a su vez influyen en la orientación futura relacionada con la educación que las madres desean que sus hijos desarrollen indirectamente, a través del deseo de las madres de transmitir diferencialmente a sus hijos la autonomía y el control motivacional. Utilizando el modelo de ecuaciones estructurales (Amos 26), el modelo construido por las madres se examinó con datos recogidos de 179 madres de niños y jóvenes judíos israelíes, lo que dio como resultado un buen ajuste del modelo de múltiples pasos a los datos. Específicamente, el análisis apoyó el impacto del deseo de las madres de transmitir autonomía motivacional -pero no del deseo de las madres de transmitir control motivacional- sobre la orientación futura deseada por las madres en relación con la educación. La discusión aborda la importancia del pensamiento futuro para influir en las ideas presentes que se aplican a la orientación futura hacia la educación superior construida por la madre para el rendimiento académico de sus hijos, y pide un mayor análisis empírico de su impacto en el comportamiento de la madre que fomenta el rendimiento académico y su impacto en el rendimiento académico de los hijos, así como más pruebas del modelo en diversas muestras.

Palabras clave. expectativas maternas de la educación superior, orientación futura construida por la madre, orientación futura, y modelado de ecuaciones estructurales.

This study was prompted by three earlier findings. One is that adolescents' images of the future – here conceptualized as future orientation – impact their behavior, in particular applying to academic achievement (Carvalho, 2015; Seginer, 2009; Seginer & Mahajna, 2018). The second is that adolescents' future orientation is indirectly impacted – via adolescents' self-esteem – by the corresponding domain-specific (such as work and career, marriage and family) future orientation mothers construct for their adolescent children (Seginer & Shoyer, 2012). The third finding (Guintra et al., 2020) corroborates that even today, as fathers are more involved in child care, in most societies mothers continue to act as children's primary caretakers.

Drawing upon these findings, the aim of the present study is to further pursue the future orientation mothers construct for their children by examining two questions: one pertains to the replicability of mother-constructed future orientation, and the second to its antecedents. Given the long-term impact of education on adults' standard of living (Davis-Kean, 2021) and consequently the importance parents grant to their children's education (Soenens et al., 2019), in this study mother-constructed future orientation pertains to children's higher education.

We start with the conceptualization of future orientation implemented in this study and continue with the conceptualization of four antecedents. One is parents' level of educational attainment as an indicator of socio-economic status (SES). The three others are mothers' educational attainment expectations for their child, and the autonomous and controlled motivations which mothers consider guiding their children's development.

Future Orientation

In a commentary article Märstin (2019) quoted Büler and Masarik's (1968) succinct depiction of the future as "unpredictable yet anticipated". Psychologists have been studying the anticipated future since the early 1930s using a variety of terms, multiple conceptualizations, and consequently different measures. While terms varied from maps-of-the-future (Israeli, 1930), a matrix of maybe (Baumeister et al., 2018) to prospection (Seligman et al., 2013), possible selves (Markus & Nurius, 1986), future time perspective (Nuttin & Lens, 1985) and future orientation (Cantril, 1965; Trommsdorff, 1968; Zimbardo & Boyd, 1999), conceptualizations have been either univariate (Zimbardo & Boyd, 1999) or multivariate (Nurmi, 1991; Peetsma & Van der Veen, 2015; Seginer et al., 2004), pertain to a specific content and hence thematic (Andre et al., 2017; Cantor & Norem, 1989) or a-thematic (Crespo et al., 2013; Johnson et al., 2015). Variations notwithstanding, the different approaches agree that thinking about the future guides action "...such that one's actions can steer the course of events toward some possible outcomes and away from others." (Baumeister et al., 2018, p. 225).

In a review report, Seginer (2022) conceptualized *future orientation* as the conscious self-reported images individuals have about their future which preoccupies their thinking at a certain time. Research findings indicating that future thinking tends to impact present behavior (Peetsma et al., 2005; Seginer, 2009; Zimbardo & Boyd, 1999) corroborate the proposition that future orientation gives (obviously, to some extent) meaning and direction to individuals' life, encourages planning and the pursuit of goals, and altogether guides their course of behavior (Bandura, 2001; Nurmi, 1991; Seligman et al., 2013; Trommsdorff, 1983).

The conceptualization of future orientation employed in the present study has three main attributes: it is thematic, multi-dimensional, and wished by mothers for their children. Its *thematic* nature draws from the premise that while time is an abstract concept, "content

is an essential element of time perspective” (Nuttin & Lens, 1985, p. 23). Moreover, at a certain point in time, future thinking may relate to a single or to multiple prospective themes, here described as *future life domains*. In the present study we examine one *future life domain*: higher education. As indicated above, the *multidimensionality* of the future thinking conceptualization is shared by several approaches similarly termed future time perspective (Andre et al., 2017; Nurmi, 1991; Kooij et al., 2018; Peetsma & van der Veen, 2015). Pertaining to the third attribute, while much of future orientation research focuses on the future orientation individuals wish for themselves, as discussed subsequently, future orientation can also be wished for close others, as is the case of the future mothers wish for their children.

Future Orientation: The Three-Component Model

The three-component model has its origin in Cantril’s (1965) human concerns narrative approach which Trommsdorff (1983; Trommsdorff et al., 1979) applied to research with adolescents and emerging adults. Research carried out in various parts of the world from China (Zhang et al., 2015) to the United States (Cantril, 1965) confirmed the authenticity of the human concerns narratives (indicated by hopes and fears) conceptualization (“...in people’s own terms what they are feeling”, Cantril, 1965, vii), and underscored the socio-cultural commonalities and differences of youth prospective images. Yet, it also resulted in two major disadvantages. One relates to its conceptual narrowness as it consists of only the cognitive representation of the future. The second is methodological. The open-ended form of the hopes and fears instrument restricts data analyses to only between-group comparisons, thus ruling out within-person multivariate procedures.

The three-component model answers both shortcomings of the human concerns approach while maintaining its thematic perspective. Taking its conceptual point of departure from the *cognitive representation* of the future, the two additional components are a *motivational antecedent* and a *behavioral outcome*, each indicated by empirical variables. Empirical analyses – altogether indicating only partial effectuality

-- consistently showed that the motivational component of the model impacts both the cognitive representation and the behavioral components (Seginer et al., 2004; Seginer & Mahajna, 2018). Thus, the motivational component impacts the behavioral component both directly and indirectly via the cognitive component. To answer the methodological shortcoming, as reported in the Method section, the open-ended instrument has been replaced by a Likert-type questionnaire assessing the empirical indicators of each of the three components as they apply to each of various prospective life domains.

The Motivational Component. The rationale underlying the motivational component pertains to two issues. One is its position as an antecedent of the two other components; the second relates to its three empirical indicators (Seginer & Mahajna, 2018). Both are supported by Ryan's premise that motivation pertains to "...the acquired valences or preferences, attributions, and expectancies... all used to predict the direction and persistence of behavior" (2013, p. 4). Similar to Ryan's conceptualization, the three empirical indicators are value (valence or preference), expectance (expectancies), and internal control (attributions), all of which indicate *autonomous* motivation (Deci & Ryan, 2000).

The Cognitive Representation Component. The unidimensional approach to future orientation has been informed by an early analysis of future orientation contending that "...future orientation has a cognitive and affective (evaluative) component, which are to be analyzed according to specific content area" (Trommsdorff et al., 1979, p. 132). As the conceptualization of future orientation has been extended, the affective-evaluative and cognitive aspects underlying the initial conceptualization of future orientation have been separated. Thus, the cognitive – indicating thinking about the future – consists of a distinct component and the affective-evaluative is one indicator of the motivational component. As mentioned above, in the three-component model the cognitive representation links the motivational and the behavioral components.

The Behavioral Component. Drawing from Lewin and Erikson, the behavioral component is indicated by two behavioral tendencies: *exploration* and *commitment*. Exploration pertains to examining the extent to which future options fit personal abilities and values, social expectations and environmental circumstances (Lewin, 1939), thus like the motivation component it satisfies the individual's need for autonomy. Commitment gives the person "a sense of knowing where one is going" (Erikson, 1968, p. 165) and resonates with a sense of competence (Deci & Ryan, 2000). Together, exploration and commitment contribute to the impact of future orientation on present behavior (Seginer, 2009; Seginer & Mahajna, 2012) and hence to the validity of future thinking as prompting present behavior.

In sum, the three-component future orientation model consists of sequential components whose empirical indicators apply, each, to a given future life domain (e.g., work and career, marriage and family). The motivational component impacts the cognitive representation component and both impact the behavioral component which in turn regulates present behavior. Moreover, underlying the association between the motivational and the behavioral components is their quality as responding to the individual's need for autonomy (Bandura, 2001; Deci & Ryan, 2008; Kruglanski et al., 2015).

The Three-Component Model Adapted to Mothers-Constructed Future Orientation. In the preface to Sigel et al. (1992) seminal volume on parental beliefs system the authors list multiple terms researchers use to conceptualize the parental cognitive processes that impact children's developmental outcomes. The list includes goals, beliefs, thoughts, theories, ideas, and attributions. We contend that the conscious self-reported images mothers have about their children's future – here conceptualized as future orientation -- relate to each and all of them. Thus, the *motivational* component of mothers' constructed future orientation is indicated by mothers' *beliefs* about the value of higher education for their child ("it is of high importance for me that my child will attend higher education"), *goals* ("I expect my child

to have higher education”), and *attributing* her child the capability of achieving it (“the idea my child will indeed pursue higher education makes me happy”).

Given that cognitive representation of the future “...puts us in direct contact with events, independently of their objective and real presence” (Nuttin & Lens, 1985, p. 17), the *cognitive* component consists of mothers’ *ideas* about higher education for their child (“I know what type of higher education I would like my child to pursue”) and personal characteristics necessary for achieving academic success (“successful higher education is worth hard work”). The *behavioral* component is indicated by what mothers *think* their child should do to *explore* future higher education options (“it is important for me that my child explores various higher education options”) and its *commitment* outcomes (“I am certain my child will pursue higher education”).

Thus, whereas the conceptualization of future orientation and other similar terms describe future thinking about the self, it also applies to the future individuals construct for and consequently may communicate to others, particularly others to whom they feel a sense of closeness and obligation such as their children (Seginer & Shoyer, 2012). Altogether, mother-constructed higher-education future orientation is another dimension of parental educational involvement which has an efficacious impact on children’s academic achievement (Tan et al., 2020).

Antecedents of Mother-Constructed Higher Education Future Orientation

The rationale underlying the antecedents included in this analysis draws on three attributes of mother-constructed future orientation regarding her child’s higher education. One (indicated earlier) relates to mother constructed future orientation as a *belief*. The second pertains to its *other-directedness*; while mostly all other future thinking conceptualizations are self-directed, in this analysis, as in an earlier one (Seginer & Shoyer, 2012), future orientation is constructed by mother for her child which thus conveys mother’s concern about the

child's wellbeing. This leads to a third attribute regarding the *content* of mother constructed future orientation as specific to *higher education*, reflecting concern about her child's education and future career.

As such, mother-constructed higher education future orientation is an aspect of education-related family environment. Aligning the specific attributes of mother-constructed future orientation and education-related family environment led us to consider four antecedents. One is parental educational attainment as an indicator of socio-economic status (Davis-Kean, 2021). The three others draw from a body of findings (Pinquant & Ebeling, 2020) indicating that the impact of parental educational attainment on children's academic outcomes is mediated by several parental educational involvement practices. Considering the attributes of mother-constructed higher education future orientation, in this study we examine three parental practices. They are mother's *educational expectations* and the motivational regulation mothers encourage their children to pursue, pertaining to both *autonomous* and *controlled regulation*.

Parental Educational Attainment. Sirin (2005) cautioned that the use of a single indicator may result in an overestimated impact of socio-economic status on academic achievement. Nevertheless, an expansive research literature on the impact of parental educational attainment on children's academic achievement (Davis-Kean, 2021; Tan et al., 2020) supports the validity of parental educational attainment as the preferable socio-economic status indicator for explaining children's academic achievement. Underlying it is the universality of years – or level -- of education as a measure of educational attainment rather than social and economic variations in the definition of occupation and income (Davis-Kean et al., 2021).

Parental Educational Involvement. Parents' educational involvement consists of multiple practices. They are listed according to their content (e.g., parent and child reading together) or overarching categories such as home-based, school-based, academic socialization (Hill & Tyson, 2009), and *subtle* forms such as parents' high expectations

(Jeynes, 2011; Tan et al., 2020), emphasis on the value of education (Tan et al., 2020), parent-child communication, and parenting style (Jeynes, 2011). Drawing upon Bourdieu's (1986) concept of *habitus*, Tan et al. recapitulated parents' educational involvement as "...a process by which parents benefit their children's achievement by transmitting their world views, attitudes, and preferences (i.e., *habitus*) to their children." (2020, p. 244). Concomitantly, Pomerantz and her associates (Pomerantz et al., 2007) contended that parental educational involvement provides children with motivational resources. Common to the multiple conceptualizations of parents' educational involvement – whether consisting of a list of parental behaviors or a generalized process – is their underlying goal to "benefit their children's achievement".

As the aim of this study is to examine *antecedents* of mothers' constructed future orientation pertaining to their children's higher education, of the existing multiple parental educational involvement practices, as indicated above, in this study we examine three specifically pertaining to academic achievement. They are parental expectations and autonomous and controlled motivation, all indicators of the *subtle form* of parental involvement (Tan et al., 2020). Their underlying rationale and interrelations are listed below.

Parental Educational Expectations. An English dictionary defines expectation as the "act of expecting" and "as a thing to look forward to", and expect as "to look forward to; regard as likely to happen" and "to look for with reason and justification" (The Random House College Dictionary, 1975, p. 465). A comprehensive meta-analysis (Pinquant & Ebeling, 2020) indicates that the empirical assessment of parental educational expectations consists of both. For one, parental expectations express parents' anticipation ("to look forward to; regard as likely to happen") of their child's education-related functioning, be it academic achievement or highest level of education. It is not only what parents aspire their child to achieve but mostly what they realistically expect her or him to achieve.

The "to look for with reason and justification" basis of parental educational expectations is also supported by two meta-analyses. One

focuses on findings (Pinquant & Ebeling, 2020; Zhang et al, 2011) that the association between parental educational expectations and children's academic achievement is bi-directional, meaning that parental expectations not only impact their children's academic achievement but also draw from it. The second is Jeynes' (2011) analysis showing that the impact of parents' expectations on academic achievement is higher for secondary than for elementary school students, as parents have accumulated more information about their child.

Altogether, meta-analyses (Pinquant & Ebeling, 2020; Tan et al., 2020) as well as empirical research carried out across time and a scope of cultural settings such as China (Mu & Hu, 2023; Zang, 2020), Israel (Seginer, 1986), and the USA ((Banner et al., 2021; Jung et al., 2021; Marsh et al., 2023) confirm that parental educational expectations – i.e., what parents regard as likely to happen -- develop in relation to parents' educational attainment and in turn impacts their children's education-related behavior. However, the association between parental educational expectations and children's education related behavior is also *indirect*, mediated by multiple and varied parental educational involvement practices. While earlier research examined the mediating effect of parents' education-relevant *behavior* such as parent-child coactivity (Eccles, 1993), achievement-supporting behaviors (Seginer, 1983) and engagement in school work (Hill & Tyson, 2009; Yamamoto & Holloway, 2010), in this study we examine parents' *motivational* encouragement. The rationale for examining both autonomous and controlled motivational regulation as instances of parental educational involvement as prompted by parental educational expectations is presented next.

Parents' Guided Autonomous and Controlled Educational Motivation

According to Deci and Ryan's self-determination theory, *autonomous motivation* consists of a gradual process by which individuals "...internalize and integrate within themselves the regulation of activities that were initially prompted and/or regulated by external

factors.” (2008, p. 16). In conjunction with intrinsic regulation this is a two-step process. Acceptance of the value of an activity initially described as such by others with whom individuals *identify*, followed by the *integration* of the identified value with other aspects of the person’s true self. *Intrinsic* regulation consists of internal satisfaction from a self-performed activity. However, to be developed and maintained this integration must be supported by individuals in the person’s close environment – such as mothers are -- whose behaviors are “encouraging initiation, supporting a sense of choice, and being responsive to the person’s thoughts, questions and initiations.” (Deci & Ryan, 2008, p. 18).

Controlled motivation consists of the two other regulatory types: extrinsic motivation and the introjection regulatory type. While common to both is reward or punishment avoidance, they differ by the source of the reaction to one’s behavior. Extrinsic motivation prompts activities leading to a tangible reward or the avoidance of punishment from others, whereas the introjection regulation is prompted by intrapersonal responses such as a sense of self-esteem or the avoidance of anxiety, shame or guilt punishment, and hence serves as internally controlled. However, as noted by Deci and Ryan, “Of course, all types of autonomous and controlled motivation are types of motivation that reflect a person’s intention to act, although they may result in different quality of outcomes” (2008, p. 15).

While earlier research examined the impact of mothers’ educational autonomous motivational support and control on their children’s school functioning (Lerner & Grolnick, 2020; Lerner et al, 2022), this study addresses mothers only, examining the motivational regulation by which mothers *encourage* their child pursuit, thus pertaining to both autonomous and controlled regulation in the realm of higher education. Given that expectations prompt further goal-directed practices, our proposition is that mothers’ educational expectations prompt a two-step process. The first is that mothers encourage their children’s motivation, as motivation applies to both autonomous and controlled

regulation types. The second – prompted by the first step -- is the higher education future orientation mothers construct for their child.

The Present Study

As indicated in the introduction, this study examines the education-related future orientation mothers construct for their children by specifically addressing two issues: the replicability of the mothers' constructed future orientation (Seginer & Shoyer, 2012) and four of its antecedents. Drawing upon earlier research the antecedents are: mothers' educational attainment, mothers' educational expectations, and mothers' supported autonomous and controlled motivation.

Review of the research literature of each of these variables (reported in an earlier section) led to the proposition that their impact on mothers' constructed future orientation forms a multiple-step model. In this model mothers' educational attainment impacts four variables pertaining to mother concerns with their children: educational expectations which in turn impacts education related future orientation mothers wish for their child via motivational autonomy and control.

Method

Participants

Data were collected from 179 mothers of Israeli Jewish children and youths. The majority of mothers had higher education (69.3%), held full-time jobs (81.1%) and were married to men who held full-time jobs (91.1%). When asked to respond to the questionnaire items by thinking about one of their children, the majority addressed themselves to either their junior (43%) or senior (49.7%) high school student child. Only 7.3% responded thinking about their elementary or middle school (5th and 6th grade) student child. Of the total number of mothers 55.3% addressed themselves to a female child, and about a half (49.3%) to a first-born child.

Instruments

Mothers' educational attainment is a three-rank ordinal scale. The three other questionnaires – mothers' educational expectations, mothers' guided autonomous and controlled motivation, and mother constructed higher education future orientation – are interval scales using a 1 (seldom/strongly disagree) to 5 (always/strongly agree) Likert scales. Descriptive statistics including means, SDs, skew and kurtosis, α -reliability scores and number of items for each scale are presented in Table 1.

Mother Level of Education

In this study mothers' educational attainment has been operationalized in terms of level of education, estimated by a three-category ordinal scale consisting of elementary, high school, and higher education.

Mothers' Higher Education Expectations

This 3-item questionnaire assessed mothers' expectations regarding their child's pursuit of higher education. The items pertained to expectations and aspirations of pursuit of higher education ("I expect/aspire my child to pursue higher education") based on the child's ability ("Considering my child's ability I expect her/him to pursue higher education"). Internal consistency $\alpha = .84$.

Mother Guided Autonomous and Controlled Educational Motivation

The Ryan and Connell (1989) items for assessing four types of regulation (extrinsic, introjected, identified/integrated, and intrinsic) were translated into Hebrew and adapted to mother's child guidance ("I guide my child to study so she/he understands the subject"). Of them the *autonomous* educational motivation scale consists of 4 identified/integrated items ("I guide my child to study because she/he enjoys learning new things") and 2 intrinsic items ("I guide my child to study because learning is fun"). The internal consistency of this scale is $\alpha = .85$. The *controlled* educational motivation consists of the 4 extrinsic

items (“I guide my child to study because that’s what she/he is supposed to do”) and 5 introjected items (“I guide my child to study so she/he will not feel bad about her/himself”). The internal consistency of this scale is $\alpha = .86$.

Mother Constructed Future Orientation

This questionnaire (Seginer & Shoyer, 2012) was adapted from the three-component scale for adolescents. Of the 17 items of which the original consists, following factor analysis the present version consisted of 15 items (total explained variance = 48.36%). To improve the internal reliability of the motivational scale, one item was deleted, resulting in a total of 14 items. The motivational scale (“It is important for me that my child does well at school”) consists of 4 items ($\alpha = .84$). The cognitive scale (“I know what kind of education I would like my child to have”) consists of 4 items ($\alpha = .61$), and the behavioral scale (“I am sure my child will obtain higher education”) consists of 6 items ($\alpha = .74$).

Procedure

Mothers were approached via several Israeli social networks with an online version of the full set of questionnaires, preceded by two introductory forms. The first consists of an explanation of the aim and content of the study and a request for cooperation by participating in the study, yet emphasizing (a) no-obligation and freedom to discontinue participation at any time, and (b) complete anonymity of participant and her family members, including dismissal of I-phone number following end of questionnaire response. The second is a form of consent to participate, repeating the right to discontinue participation at any time. The rest of the package consisted of the three questionnaires -- educational expectations, autonomous and controlled motivation, and future orientation – and biographical information which also included mother and father’s level of education, and target child’s gender and school grade.

Results

Preliminary analyses

Empirical testing of the multiple step model was preceded by two analyses. Descriptive statistics including means, SDs, skew and kurtosis and α -reliability scores as well as number of items for each scale are presented in Table 1.

Table 1

Descriptive Statistics and Internal Consistency Coefficients (α)

	Mean	SD	Skew	Kurtosis	α
Mother education/2 (2)	0.69	0.46	-0.84	-1.03	
Autonomous motivation/5 (6)	3.55	0.74	-0.20	-0.20	.85
Controlled motivation/5 (9)	2.48	0.80	0.51	0.14	.86
Higher education expectations/5 (3)	4.67	0.59	-2.00	3.65	.84
Future orientation motivational/5 (5)	4.44	0.57	-1.12	1.56	.75
Future orientation cognitive/5 (4)	3.92	0.57	-0.60	0.42	.61
Future orientation behavioral/5 (5)	4.27	0.53	-0.54	0.15	.74

Note. Scale range is either 2 or 5. Number of items for each scale appears in parenthesis.

Correlation coefficients between mother education and model variables were low ($r = -.01$ to $.19$) and with the exception of one (correlation coefficient between mother education and future orientation behavioral component) non-significant. Correlation coefficients between the model variables are presented in Table 2.

Table 2

Correlation Coefficients for Study Variables

	Mother Ed	Auton motiv	Control motiv	Hi Ed expect.	FO motiv.	FO cog	FO Beha
Mother education		-.06	-.01	.12	.09	-.02	.19*
Autonomous motivation			.17*	.31***	.32***	.30***	.41***
Controlled motivation				.07	.06	.14	.07
Higher education expectations					.51***	.21**	.55***
Future orientation motivational						.53***	.67***
Future orientation cognitive							.46***

Note. * $p \leq .05$ ** $p \leq .01$ *** $p \leq .001$

Multiple Step Model

The fit of the multiple step model to the data was tested by the Structural Equation Model (Amos 26; Arbuckle, 2012). The model (Figure 1) showed a good fit to the data. $X^2(8) = 18.35$ $p < .05$ CFI = .97 RMSEA = .08 90% CI [.03-.14], SRMR = .041 NFI = .95. The β path indicated the impact of mother's level of education on two variables: mothers' expectations about their child's academic achievement ($\beta = .19$ $p < .01$) and the behavioral component of educational future orientation ($\beta = .12$, $p < .05$). The analysis further showed that mothers' academic achievement expectations had a positive impact on guided autonomous motivation $\beta = .41$, $p < .001$) as well as on the motivational ($\beta = .29$, $p < .001$) and behavioral ($\beta = .21$, $p < .001$) components of mother constructed future orientation, the impact of mother's controlled motivation on higher education expectations and the three future orientation components was low and non-significant. Finally, the future orientation motivational component had a positive impact on the future orientation cognitive and behavioral components ($\beta = .53$ and $.51$, respectively, $p < .001$) and the cognitive component had positive, though lower, impact on the behavioral component ($\beta = .14$, $p < .05$).

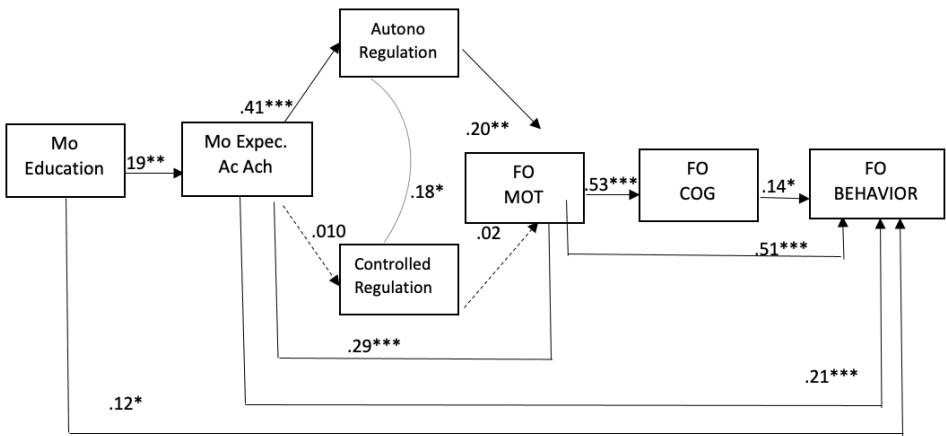


Figure 1. Structural equation model predicting mothers’ constructed higher education future orientation

Note. * $p \leq .05$ ** $p \leq .01$ *** $p \leq .001$

Discussion

The psychological importance of future orientation rests on the premise supported by a large body of findings that future thinking impacts present behavior. While Bandura (2001) indicated that for future thinking to prompt present behavior it has to be goal-directed, Douvan and Adelson (1966) emphasized its special importance for adolescent behavior. Both are empirically supported by research on the impact of future orientation on academic achievement carried out in several cultural settings such as China (Mu & Hu, 2023; Zang, 2020). Israel (Seginer, 2009) and the United States (Banner et al., 2021).

This study has taken its point of departure from an expanded approach to future orientation, contending that the future orientation parents construct for their children is one attribute of parents’ home environment, and as such impacts children’s development. Given that thinking about the future – here conceptualized as future orientation

-- is content driven and that mother is the primary socialization figure in the majority of families, in this study parents' future orientation pertains to the higher education mothers wish for their children. While earlier research showed that the future orientation mothers wish for their children impacts children's domain-fitting future orientation (Seginer & Shoyer, 2012) and children's education-related future orientation impacts their academic achievement (Seginer, 2009), in this study we ask what prompts the mothers-wished future orientation. As reported in earlier sections of this paper, we specifically focus on the higher education mothers wish for their children and address four mothers' attributes. The attributes are level of education, the academic achievement they expect their children to achieve, and the autonomous and controlled regulation they wish their children to pursue.

Our findings contribute to the future orientation literature in two ways. One is confirming an earlier finding (Seginer & Shoyer, 2012) that the three-component future orientation initially developed to address the self, also applies to the future orientation considered for close others as the case is when mothers constructed their children's future orientation regarding higher education. The second contribution pertains to expanding knowledge about mothers' attributed future orientation, specifically applying to their children's higher education, by addressing its antecedents. While antecedents include both environment and personal attributes, here we address four personal attributes, of relevance to children's education related future orientation. As indicated above, these antecedents are mothers' education, their expectations towards children's academic achievement and the education-relevant autonomous and controlled regulation they wish their children to pursue.

Empirical testing confirms the impact of these four mother attributes, thus enriching our knowledge about it by showing (a) the varied relations among them and (b) their impact on the future orientation mothers construct for their children. Considering first the impact of mothers' level of education, our findings show its multiple –direct and indirect – impacts, thus indicating its high relevance. Specifically,

mothers' level of education has a direct impact on mothers' expectations regarding their children's academic achievement and via it on the motivational autonomous regulation -- but not on the controlled regulation -- as well as on the behavioral component of future orientation they wish for their children. Likewise, the impact of mothers' expectations on future orientation is both direct and indirect. The direct path pertains to the motivational and behavioral components and the indirect path to the impact of mothers' expectations on the motivational component of future orientation via autonomous regulation, thus confirming the importance of the motivational component of future orientation. Two related findings of the present study pertaining to the respondents' tendency to attribute higher endorsement to the autonomous motivational regulation than to the controlled motivational regulation, resulting in a significant mediating effect of the autonomous but not the controlled motivational regulation, thus indicate the respondents' tendency to prefer autonomous motivational regulation over the controlled motivational regulation.

Finally, and as indicated above, our findings confirm an earlier analysis (Seginer & Shoyer, 2012) indicating that future orientation thinking -- expressed in the three component model -- applies both to the self and to close others, mothers in the case of both an earlier and the present analysis. This finding brings to the fore two issues to be addressed in future research. One pertains to expanding the list of close others which will include father, siblings, close friends, and teacher, thus addressing the impact of attributed future orientation to a child or adolescent and comparing it to that of mother attributed future orientation.

The second is expanding the attributed future orientation model by including the impact of the close other's future orientation on the child or adolescent behavior. In the specific case of future orientation applied to higher education (as the case is in the present analysis), the question will apply to academic achievement. In other words, to the question whether and to what extent higher education future orientation attributed by a close other impacts the academic achievement

of the target child, directly, or indirectly via the target child's higher education future orientation. Addressing these questions and testing them as well as the model presented and analyzed in the present study on children and adolescents from diverse cultures will answer to the limitations of the present analysis.

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